# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/550,971 | 09/26/2005 | Jean Monne | P1938US | 4133 |

8968          7590          03/06/2009
DRINKER BIDDLE & REATH LLP
ATTN: PATENT DOCKET DEPT.
191 N. WACKER DRIVE, SUITE 3700
CHICAGO, IL 60606

| EXAMINER |
|---|
| SKED, MATTHEW J |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2626 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 03/06/2009 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/550,971 | MONNE ET AL. |
| | Examiner | Art Unit | |
| | MATTHEW J. SKED | 2626 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____ .
2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-19* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-19* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *26 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some *   c)☐ None of:
        1.☒ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____ .
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____ .
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

## DETAILED ACTION

### *Response to Amendment*

1.    The preliminary amendment filed on 9/26/05 has been entered in the case file.

### *Specification*

**Content of Specification (irrelevant sections omitted)**

(f)    <u>Background of the Invention</u>:  See MPEP § 608.01(c). The specification
       should set forth the Background of the Invention in two parts:

      (1)    <u>Field of the Invention</u>: A statement of the field of art to which the
       invention pertains.  This statement may include a paraphrasing of
       the applicable U.S. patent classification definitions of the subject
       matter of the claimed invention.  This item may also be titled
       "Technical Field."

      (2)    <u>Description of the Related Art including information disclosed under
       37 CFR 1.97 and 37 CFR 1.98</u>: A description of the related art
       known to the applicant and including, if applicable, references to
       specific related art and problems involved in the prior art which are
       solved by the applicant's invention.  This item may also be titled
       "Background Art."

(g)    <u>Brief Summary of the Invention</u>: See MPEP § 608.01(d).  A brief summary
       or general statement of the invention as set forth in 37 CFR 1.73.  The
       summary is separate and distinct from the abstract and is directed toward
       the invention rather than the disclosure as a whole.  The summary may
       point out the advantages of the invention or how it solves problems
       previously existent in the prior art (and preferably indicated in the
       Background of the Invention).  In chemical cases it should point out in
       general terms the utility of the invention.  If possible, the nature and gist of
       the invention or the inventive concept should be set forth.  Objects of the
       invention should be treated briefly and only to the extent that they
       contribute to an understanding of the invention.

(h)    <u>Brief Description of the Several Views of the Drawing(s)</u>: See MPEP §
       608.01(f).  A reference to and brief description of the drawing(s) as set
       forth in 37 CFR 1.74.

(i)    Detailed Description of the Invention: See MPEP § 608.01(g).  A
description of the preferred embodiment(s) of the invention as required in
37 CFR 1.71.  The description should be as short and specific as is
necessary to describe the invention adequately and accurately. Where
elements or groups of elements, compounds, and processes, which are
conventional and generally widely known in the field of the invention
described and their exact nature or type is not necessary for an
understanding and use of the invention by a person skilled in the art, they
should not be described in detail.  However, where particularly
complicated subject matter is involved or where the elements,
compounds, or processes may not be commonly or widely known in the
field, the specification should refer to another patent or readily available
publication which adequately describes the subject matter.

2.    The disclosure is objected to because of the following informalities: First, the

specification has no headings to indicate the numerous sections of the specification.

Additionally, there are no separate sections specifically directed towards the

background of the invention or the summary of the invention.  Finally, there is no brief

description of the several views of the drawing(s).

Appropriate correction is required.

## Claim Rejections - 35 USC § 112

3.    The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.    Claims 7, 8 and 14 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Claims 7 and 8 recite "the associated stored form," however, it is unclear if the

claims are referring to the stored form on the user terminal or the stored form on the

server. For the purposes of examination it will be assumed the claims refer to the

stored form on the user terminal.

As per claim 14, the claim is directed to "a server," however, several of the

means of the server recites transmitting a signal to the server. It is unclear how the

server is transmitting signals to itself. It seems that the newly amended subject matter

is the same means recited for the user terminal claimed in claim 9. Because claim 14 is

directed to a server, these means will be ignored.


### *Claim Rejections - 35 USC § 102*

5.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.      Claims 1, 4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by

Baker (U.S. Pat. 6,122,613), cited by the Applicant.

As per claim 1, Baker teaches a distributed speech recognition method,

comprising at least one user terminal and at least one server, capable of communicating

with one another via a telecommunications network, wherein, at the user terminal, at

least the following steps are performed:

- obtain an audio signal to be recognized (Fig. 3, element 301);

- calculate modeling parameters for the audio signal to be recognized; and -

attempt to associate a stored form with the modeling parameters (real-time recognizer,

Fig. 3, element 303) ; and

- independently of the step for attempting to associate a stored form, transmit a

signal indicating the audio signal to be recognized to the server (offline recognizer, col.

8, lines 12-18 and Fig. 3, element 309); and

wherein, at the server, at least the following steps are performed:

- receive the signal transmitted by the user terminal; - attempt to associate a

stored form with the received signal (independent speech recognition, col. 8, lines 12-

18).

7.      As per claim 4, Baker teaches wherein the transmitted signal is the original audio

signal (col. 8, lines 12-18).

8.      As per claim 6, Baker teaches wherein the associated stored form determined at

the terminal is chosen, when the associated form exists (speech recognition only

returns existing models, col. 7, lines 43-49).

9.      As per claim 7, Baker teaches wherein the associated stored form determined

the quickest is chosen (real-time recognizer, col. 7, lines 43-49).

10.     As per claim 8, Baker teaches wherein the associated form judged best

according to a defined criterion is chosen (speech recognition chooses the most

probable result, col. 7, lines 43-49).

11.     Claims 14-19 are rejected under 35 U.S.C. 102(e) as being anticipated by

Reding et al. (U.S. Pat. 6,823,306).

As per claim 14, Reding teaches a server adapted for cooperating with a user

terminal comprising:

means for receiving a signal coming from a user terminal and selected at said

terminal; and recognition means for associating at least one stored form with modeling

parameters at the input (speech processing facility receives speech and performs

speech recognition operations thereon, col. 6, line 58 to col. 7, line 4).

12.     As per claim 15, Reding teaches means for calculating modeling parameters for

an input signal; control means for controlling the calculation means and the recognition

means such that:

• when the signal received by the reception means is of the audio type, the

parameter calculation means are activated by addressing the selected signal to them as

input signal, and the parameters calculated by the calculation means are addressed to

the recognition means as input parameters (if speech is received then feature extraction

is performed, col. 13, line 63 to col. 14, line 4); and

• when the selected signal received by the reception means indicates modeling

parameters, said indicated parameters are addressed to the recognition means as input

parameters (speech recognition of extracted features, col. 14, lines 5-12).

13.     As per claim 16, Reding teaches means for detecting activity in order to produce

the signal to be recognized in the form of speech segments extracted from an original

audio signal outside of periods without voice activity and in which the control means are

designed to control the parameter calculation means (monitors for input speech, col. 11, lines 27-33) and the recognition means when the received signal is of the audio type such that:

if the received signal of the audio type is in the form of speech segments after voice activation detection, the parameter calculation means are activated by addressing the received signal to them as input signal, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters; otherwise, the server voice activation detection means are activated by addressing the received signal to them as input signal, then the segments extracted by the voice activation detection means are addressed to the parameter calculation means as input parameters, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters (features of the detected speech are extracted at the server, col. 13, line 63 to col. 14, line 4).

14.    As per claim 17, Reding teaches means for downloading voice recognition software resources via the telecommunications network onto a terminal (model training performed on server and updated to user terminal, Fig. 7).

15.    As per claim 18, Reding teaches wherein said resources comprise at least one module from amongst: a VAD module, a module for calculating modeling parameters for an audio signal and a recognition module for associating at least one stored form with modeling parameters (feature extractor and speech recognition, Fig. 10).

16.    As per claim 19, Reding teaches means for determining the stored form to be chosen between the stored forms determined at the terminal and at the server,

respectively (determines if to perform speech recognition at terminal or server, col. 11,

lines 34-48).

### *Claim Rejections - 35 USC § 103*

17.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

18.     Claims 2, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Baker in view of Reding.

        As per claim 2, Baker does not teach wherein the signal transmitted by the user

terminal to the server is selected from at least the audio signal to be recognized and a

signal indicating the modeling parameters; wherein, if the received signal is of the audio

type, the server calculates modeling parameters for the received audio signal and

attempts to associate a stored form with the modeling parameters of the received audio

signal; and wherein, if the received signal indicates modeling parameters, the server

attempts to associate a stored form with said modeling parameters.

        Reding teaches transmitting either the speech signal or a feature vector and if

the speech signal is transmitted the features are calculated at the server prior to speech

recognition (col. 12, lines 47-59 and col. 13, line 63 to col. 14, line 12).

        It would have been obvious to one of ordinary skill in the art at the time of

invention to modify Baker wherein the signal transmitted by the user terminal to the

server is selected from at least the audio signal to be recognized and a signal indicating

the modeling parameters; wherein, if the received signal is of the audio type, the server

calculates modeling parameters for the received audio signal and attempts to associate

a stored form with the modeling parameters of the received audio signal; and wherein, if

the received signal indicates modeling parameters, the server attempts to associate a

stored form with said modeling parameters as taught by Reding because in distributed

speech recognition there are a finite number of predictable methods such as performing

all the processing on the terminal, performing all the processing at the server,

performing all the processing at both the terminal and server or splitting the processing

between the terminal and the server.  Therefore, it would have been obvious to try

Reding's method of splitting processing in the Baker process.

19.     As per claim 3, Baker does not teach wherein obtaining the signal to be

recognized at the terminal comprises a VAD in order to produce the audio signal to be

recognized in the form of speech segments extracted from an original audio signal

outside periods without voice activity.

Reding teaches monitoring the input and only performing speech processing

when speech is detected (col. 11, lines 27-33).

It would have been obvious to one of ordinary skill in the art at the time of

invention to modify Baker to include a VAD as taught by Reding because this is a

known technique to improve a similar device in the same way.  Specifically, the VAD

would prevent unneeded processing when there is no speech input in the system.

20.     As per claim 5, Baker does not teach if the received signal of the audio type is in the form of speech segments after voice activation detection, the parameter calculation means are activated by addressing the received signal to them as input signal, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters; otherwise, the server voice activation detection means are activated by addressing the received signal to them as input signal, then the segments extracted by the voice activation detection means are addressed to the parameter calculation means as input parameters, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters.

Reding teaches if the received signal of the audio type is in the form of speech segments after voice activation detection, the parameter calculation means are activated by addressing the received signal to them as input signal, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters; otherwise, the server voice activation detection means are activated by addressing the received signal to them as input signal, then the segments extracted by the voice activation detection means are addressed to the parameter calculation means as input parameters, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters (features of the detected speech are extracted at the server, col. 13, line 63 to col. 14, line 4).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Baker so that if the received signal of the audio type is in the form of speech segments after voice activation detection, the parameter calculation means are activated by addressing the received signal to them as input signal, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters; otherwise, the server voice activation detection means are activated by addressing the received signal to them as input signal, then the segments extracted by the voice activation detection means are addressed to the parameter calculation means as input parameters, then the parameters calculated by the parameter calculation means are addressed to the recognition means as input parameters as taught by Reding because it would ensure that only speech segments are processed rather than noise.

21.     Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reding in view of Baker.

        As per claim 9, Reding teaches a user terminal adapted for cooperating with a server, for comprising:

        - means for obtaining an audio signal to be recognized; - means for calculating modeling parameters for the audio signal (feature extractor processes audio input, col. 8, lines 31-39); and

        - control means for selecting a signal to be transmitted to the server from between the audio signal to be recognized and a signal indicating the calculated

modeling parameters (if feature extraction is supported the features are transmitted otherwise its the speech signal, col. 11, lines 34-48 and col. 12, lines 47-59);

-recognition means for associating at least one stored form with modeling parameters calculated by the calculation means (local recognition, col. 11, lines 34-48);

-means for transmitting a signal indicating the audio signal to be recognized to the server (col. 12, lines 47-59).

Reding does not teach the transmitting is independent from recognition means.

Baker teaches a system of distributed speech recognition where the speech transmitted to the server is done independently of the local recognition means.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Reding to transmit the speech independent of the recognition means as taught by Baker because it would increase recognition reliability to have the recognition performed by multiple speech recognizers.

22.    As per claim 10, Reding teaches wherein the means for obtaining the audio signal to be recognized comprise means for detecting voice activity in order to produce the signal to be recognized in the form of speech segments extracted from an original audio signal, outside of periods without voice activity (col. 11, lines 27-33).

23.    As per claim 11, Reding teaches wherein the control means are designed to select at least one signal to be transmitted to the server from amongst the original audio signal, the audio signal to be recognized in the form of the speech segments extracted by the voice activation detection means and the signal indicating the calculated

modeling parameters (if feature extraction is supported the features are transmitted otherwise its the speech signal, col. 11, lines 34-48 and col. 12, lines 47-59).

24.     As per claim 12, Reding teaches wherein at least one part of the parameter calculation means and of the recognition means is downloaded from the server (model training performed on server and updated to user terminal, Fig. 7).

25.     As per claim 13, Reding teaches means for determining the stored form to be chosen between the stored formed determined at the terminal and the server, respectively (determines if to perform speech recognition at terminal or server, col. 11, lines 34-48).


### Conclusion

26.     The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Anastasakos et al. (U.S. Pat. 7,197,331) and Balasuriya (U.S. Pat. 6,898,567) teach methods of distributed speech recognition which uses both local and remote speech recognizers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. SKED whose telephone number is (571)272-7627.  The examiner can normally be reached on Mon-Fri (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843.  The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew J Sked/
Examiner, Art Unit 2626